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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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COUNTRY	USSR (Kalinin Oblast)	REPORT		50X1
SUBJECT	Information on Rocket Engine Tests at Gorodomlya Island	DATE DISTR.	8 March 1961	50X1-HUM
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RETURNEE EXPLOITATION GROUP

REPORT NO. [redacted] 50X1

COUNTRY : USSR

DATE DISTR. 4 FEB. 54

SUBJECT : [redacted] Information on Rocket Engine
Tests at Gorodomlya Island

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THIS IS UNEVALUATED INFORMATION

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2. [redacted] the function of the annular chamber and
the injection of K-Stoff. [redacted]

K-Stoff is injected into the combustion chamber for three reasons:
(a) to manufacture the gases necessary for the test; (b) to control
the temperature (T) in the chamber; and (c) to assist in the final
combustion of the combination of B-Stoff and O₂.

3. [redacted]

K-Stoff was injected into the annular chamber through ports in the
ring [redacted] Gas was also
withdrawn through other ports in the same ring. K-Stoff was
not injected into the cooled pipe to the turbine because it was
necessary that the gas be generated in the combustion chamber
and that no liquid be passed through the cooled pipe to the

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turbine. One of the reasons for constructing the annular chamber was to try to establish a more accurate proportion between the amount of gas flowing into the turbine and the amount of gas flowing through the Laval nozzle. In order to do this, the K-Stoff had to be injected into the annular chamber and could not be injected into the cooled pipe to the turbine.

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4.

most sixty-second tests were started with 100 kg. of B-Stoff, 240 kg. of K-Stoff, and 110 kg. of O_2 . Approximately 10 kg. of O_2 would be consumed in the pre-cooling and, at the finish of the test, 10-15 kg. B-Stoff and 10-15 kg. O_2 would remain in the containers.

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the amount of K-Stoff remaining was always variable because injection rates of K-Stoff would change drastically during the test in order to control temperatures.

5.

The combination of O_2 and B-Stoff during all of the experiments remained the same. The amount by weight of B-Stoff and O_2 was the same. The mixture was approximately the same as that used in the V-2.

6.

The ratio of the amount of K-Stoff injected as related to B-Stoff injected was always different for each test.

7.

O_2 and B-Stoff flow rates changed during the test in order to control the pressure; however, they changed conversely. Since it was the temperature that interested in changing on the various tests, the flow rates of O_2 and B-Stoff were controlled with valves that were set to automatically control the pressure at 352.8 PSI (24 atue). This was done so the test could be run at a constant pressure and at variable temperatures.

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8.

The amount of O_2 injection was controlled by the pressure and not the temperature. K-Stoff was used to control the temperature. An increase in flow of K-Stoff would reduce the temperature in the combustion chamber. A decrease in the injection of K-Stoff would raise the temperature in the chamber. When these changes in temperature affected the constant pressure of 352.8 PSI, then more O_2 and B-Stoff would be injected to raise the pressure, or less O_2 and B-Stoff would be injected to lower the pressure.

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